

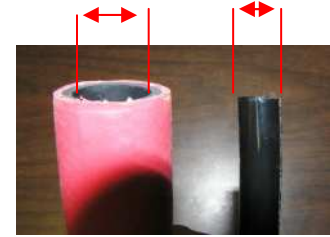
# TIRE CHANGER “CONNECTIONS AND FITTINGS” GUIDE

## • TUBING AND HOSE

- TUBING is usually the smaller plumbing on a Tire Changer.
  - Tubing is generally specified by the **OUTSIDE DIAMETER** and can be in Millimeters or Inches.
- HOSE is usually the larger plumbing on a Tire Changer.
  - Hose is generally specified by the **INSIDE DIAMETER** and can be in Millimeters or Inches.

Hose is measured by  
**INSIDE DIAMETER**

Tubing is measured by  
**OUTSIDE DIAMETER**



## • CONNECTION TYPES

- **BARBED CONNECTIONS** generally have a hose pushed over a barbed nipple secured with a clamp.
- **COMPRESSION CONNECTIONS** generally have hose or tubing pushed over a nipple and have a nut that compresses the connection as it is tightened.
- **PUSH-TO-CONNECT CONNECTIONS** generally have tubing pushed into a precision connector that grips and seals. This type usually has a collar that can be retracted (pushed away from the tubing) to release the tubing.
- **THREADED CONNECTIONS:** Almost all the threaded connections used on Tire Changers are measured using the **PIPE THREAD STANDARD**. This standard originally was a measurement using the inside diameter of a “standard pipe”, but has evolved to what is now just a “size” measurement. This means that it specifies the size of the connector but the “size” does not directly correspond to any of the dimensions. There are 3 types commonly found on Tire Changers. The most common “sizes” are 1/8” and 1/4”.



- **Tapered Pipe Thread:** These threaded parts are commonly referred to as “pipe thread” and the threads are tapered so they get tighter as they are screwed together. These connectors **SEAL AT THE THREADS** and commonly have a sealant or sealing tape applied to the threads before connecting. Unfortunately, the two types differ only in threads per inch and the machined “angle” of the threads themselves, making them very difficult to distinguish. The best way is with a **THREAD PITCH GAUGE**. If that is not available, you can usually determine the two by trying to thread them with a known connector; a proper match gets tighter **GRADUALLY AND SMOOTHLY** while a mismatch feels more like it “binds” quickly.

1/4” NPT

1/8” BSPT

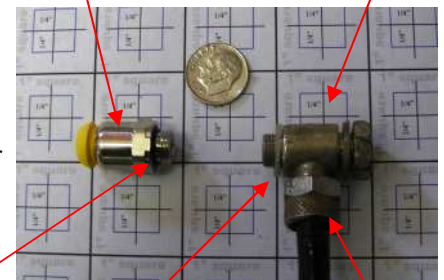
1/8” NPT



- **NPT, National Pipe Tapered**
- **BSPT, British Standard Pipe Tapered** is often mistakenly referred to as “metric” pipe thread. This is the most common type of Tapered Thread Connection on Tire Changers.
- **Straight Pipe Thread**
  - **BSPP, British Standard Parallel Pipe** is common on some Tire Changers. It uses a “standard pipe” sizing but it is not a tapered thread. This type of connector “seals” using a washer or o-ring between the machined surfaces where they meet.

A PUSH-TO-CONNECT TO BSPP CONNECTOR

A “BANJO” CONNECTOR



BSPP CONNECTORS WITH O-RING AND SEALING WASHER

COMPRESSION CONNECTOR

## • FITTINGS and CONNECTORS are parts that connect the tubing and hoses to each other, or other parts of the Tire Changer. They often will have multiple Connections.

- Tees commonly connect multiple tubes together.
- Unions commonly connect two tubes together.
- Tube to Threaded commonly connect tubes to parts with threaded ports.
- **Combination Fittings** do a combination of the above: like connect multiple tubes to a threaded port.
  - “Banjo” Style Combination Fittings are common on some Tire Changers. They use a special bolt that goes through one or two “banjo” shaped connectors. The bolt is ported (hollow in the middle and has holes in it).